**BasicCalculatorAppUsingAndroidUIControls**

**EXP NO:9**

**Date:2.5.2025**

# AIM:

Developan AndroidapplicationusingcontrolslikeButton,TextView, EditTextfordesigninga calculator having basic functionality like Addition, Subtraction, multiplication, and Division.

# CODE:

## MainActivity.kt

packagecom.example.myapplication\_bijlesh

import android.os.Bundle import android.view.View import android.widget.Button importandroid.widget.EditText import android.widget.Toast

importandroidx.appcompat.app.AppCompatActivity class MainActivity : AppCompatActivity() {

privatelateinitvardisplay:EditText privatevar currentInput: String= "" private var operand1: Double = 0.0 private var operand2: Double = 0.0 private var operator: String = ""

overridefunonCreate(savedInstanceState:Bundle?){ super.onCreate(savedInstanceState) setContentView(R.layout.*activity\_main*)

display=findViewById(R.id.*display*)

// Number buttons setButtonClickListener(R.id.*button0*) setButtonClickListener(R.id.*button1*) setButtonClickListener(R.id.*button2*) setButtonClickListener(R.id.*button3*) setButtonClickListener(R.id.*button4*) setButtonClickListener(R.id.*button5*) setButtonClickListener(R.id.*button6*) setButtonClickListener(R.id.*button7*) setButtonClickListener(R.id.*button8*) setButtonClickListener(R.id.*button9*)

// Operator buttons setOperatorClickListener(R.id.*buttonAdd*, "+") setOperatorClickListener(R.id.*buttonSubtract*, "-") setOperatorClickListener(R.id.*buttonMultiply*,"\*") setOperatorClickListener(R.id.*buttonDivide*, "/")

// Clear button findViewById<Button>(R.id.*buttonClear*).setOnClickListener{

currentInput="" operand1 = 0.0

operand2 = 0.0 operator = "" display.setText("")

}

// Equal button findViewById<Button>(R.id.*buttonEqual*).setOnClickListener{

if(operator.*isEmpty*())return@setOnClickListener

try {

operand2=currentInput.*toDouble*()

val result = when (operator) { "+"->operand1+operand2 "-" -> operand1 - operand2 "\*"->operand1\*operand2 "/" -> {

if(operand2== 0.0){

Toast.makeText(this@MainActivity,"Cannotdividebyzero", Toast.*LENGTH\_SHORT*).show()

return@setOnClickListener

}

operand1/operand2

}

else->0.0

}

display.setText(result.toString())

operand1=result//Updateoperand1forsubsequentcalculations operator = ""

currentInput=result.toString()

}catch(e:Exception){

Toast.makeText(this@MainActivity,"Error:InvalidInput", Toast.*LENGTH\_SHORT*).show()

}

}

}

//Setupnumberbuttonlisteners

privatefunsetButtonClickListener(buttonId:Int){ val button: Button = findViewById(buttonId) button.setOnClickListener {

currentInput+=button.*text*.toString() display.setText(currentInput)

}

}

//Setupoperatorbuttonlisteners

privatefunsetOperatorClickListener(buttonId:Int,op:String){ val button: Button = findViewById(buttonId)

button.setOnClickListener{

if (currentInput.*isNotEmpty*()) { operand1=currentInput.*toDouble*() currentInput = ""

operator=op

}

}

}

//Optional:Addfunctionalitytohandledecimalpoint(ifneeded) private fun isDecimalPointValid(): Boolean {

return!currentInput.*contains*(".")

}

}

## activity\_main.xml

<?xmlversion="1.0"encoding="utf-8"?>

<LinearLayoutxmlns:android="<http://schemas.android.com/apk/res/android>" xmlns:tools="<http://schemas.android.com/tools>" android:id="@+id/calculatorLayout"android:layout\_width="match\_parent" android:layout\_height="match\_parent"

android:orientation="vertical" android:padding="16dp" tools:context=".MainActivity">

<EditTextandroid:id="@+id/display"

android:layout\_width="match\_parent" android:layout\_height="80dp" android:background="#000000" android:textColor="#FFFFFF" android:textSize="28sp" android:gravity="end|center\_vertical" android:inputType="none" android:focusable="false" android:clickable="false" android:padding="12dp" android:layout\_marginBottom="12dp"/>

<!--Row 1:789/-->

<LinearLayoutandroid:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="horizontal">

<Buttonandroid:id="@+id/button7"style="@style/CalcButton"android:text="7"/>

<Buttonandroid:id="@+id/button8"style="@style/CalcButton"android:text="8"/>

<Buttonandroid:id="@+id/button9"style="@style/CalcButton"android:text="9"/>

<Buttonandroid:id="@+id/buttonDivide"style="@style/CalcButton"android:text="/"/>

</LinearLayout>

<!--Row 2:456\*-->

<LinearLayout

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="horizontal">

<Buttonandroid:id="@+id/button4"style="@style/CalcButton"android:text="4"/>

<Buttonandroid:id="@+id/button5"style="@style/CalcButton"android:text="5"/>

<Buttonandroid:id="@+id/button6"style="@style/CalcButton"android:text="6"/>

<Buttonandroid:id="@+id/buttonMultiply"style="@style/CalcButton"android:text="\*"/>

</LinearLayout>

<!--Row 3:123- -->

<LinearLayoutandroid:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="horizontal">

<Buttonandroid:id="@+id/button1"style="@style/CalcButton"android:text="1"/>

<Buttonandroid:id="@+id/button2"style="@style/CalcButton"android:text="2"/>

<Buttonandroid:id="@+id/button3"style="@style/CalcButton"android:text="3"/>

<Buttonandroid:id="@+id/buttonSubtract"style="@style/CalcButton"android:text="-"/>

</LinearLayout>

<!--Row 4:0C=+-->

<LinearLayoutandroid:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="horizontal">

<Buttonandroid:id="@+id/button0"style="@style/CalcButton"android:text="0"/>

<Buttonandroid:id="@+id/buttonClear"style="@style/CalcButton"android:text="C"/>

<Buttonandroid:id="@+id/buttonEqual"style="@style/CalcButton"android:text="="/>

<Buttonandroid:id="@+id/buttonAdd"style="@style/CalcButton"android:text="+"/>

</LinearLayout>

</LinearLayout>

## styles.xml

<resources>

<style name="CalcButton">

<itemname="android:layout\_width">0dp</item>

<itemname="android:layout\_height">wrap\_content</item>

<itemname="android:layout\_weight">1</item>

<itemname="android:padding">16dp</item>

<itemname="android:textSize">24sp</item>

<itemname="android:background">?attr/selectableItemBackground</item>

<itemname="android:textColor">#000000</item>

</style>

</resources>

# OUTPUT:

****

**RESULT:**

Thus, abasiccalculatorapplicationwas successfullydeveloped usingAndroidcontrolslike Button, TextView, and EditText to perform addition, subtraction, multiplication, and division operations.